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TI Surface-modified inorganic powders having highly hydrophobic surface and extremely low volatile component residue and their uses in various plastic and rubber formulations
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PA Nippon Aerosil Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
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CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002256173	ICM	C09C003-00
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AB The powders useful as additives for powd. ***coating*** and electrophotog. toners, viscosity regulators for adhesives and ***coatings*** , antiblocking agents for plastic films, reinforcement fillers for engineering plastics and rubber, etc., are attained by treating with C.gtoreq.16 long-chained alkylsilane compds. in the presence of amine catalysts, followed by devolatilizing through 2-stage heating at 200-400.degree. and at 150-400.degree., resp. Thus, misting water 3 over Aerosil 1200 (silica) powder 100, spraying a mixt. of octadecyltrimethoxysilane (I) 30, diethylamine 1 and hexane 60 g over the wetted silica, heating at 200.degree. for 1 h while stirring and flushing with N gas at 200.degree. for 1 h gave a surface-treated silica with hydrophobicity >99%, volatile component residue <1 ppm and viscosity 342 Pa.s, vs. 93, 12 and 62, resp., for hexyltrimethoxysilane in place of I and in the absence of diethylamine.
ST silica powder surface hydrophobic treatment longer alkyl alkoxysilane
IT Hydrolysis catalysts
(amines; in manuf. of surface-modified inorg. powders having highly hydrophobic surface and extremely low volatile component residue and uses in various plastic and rubber formulations)
IT Amines, uses
RL: CAT (Catalyst use); USES (Uses)
(catalyst for alkoxysilanes; in manuf. of surface-modified inorg. powders having highly hydrophobic surface and extremely low volatile

component residue and uses in various plastic and rubber formulations)

IT Acrylic polymers, uses
Epoxy resins, uses
Polyurethanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(matrix resins; surface-modified inorg. powders having highly hydrophobic surface and extremely low volatile component residue and uses in various plastic and rubber formulations)

IT Polysiloxanes, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(modifier or matrix resins; surface-modified inorg. powders having highly hydrophobic surface and extremely low volatile component residue and uses in various plastic and rubber formulations)

IT Fillers
(oxides; manuf. of surface-modified inorg. powders having highly hydrophobic surface and extremely low volatile component residue and uses in various plastic and rubber formulations)

IT ***Silsesquioxanes***
RL: MOA (Modifier or additive use); USES (Uses)
(surface hydrophobic modifier; surface-modified inorg. ***powders*** having highly hydrophobic surface and extremely low volatile component residue and uses in various plastic and rubber formulations)

IT Adhesives
Sealing compositions
(surface-modified inorg. powders having highly hydrophobic surface and extremely low volatile component residue and uses in various plastic and rubber formulations)

IT Oxides (inorganic), properties
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(surface-modified inorg. powders having highly hydrophobic surface and extremely low volatile component residue and uses in various plastic and rubber formulations)

IT 107-15-3, Ethylenediamine, uses 109-89-7, Diethylamine, uses
RL: CAT (Catalyst use); USES (Uses)
(catalyst for alkoxysilanes; in manuf. of surface-modified inorg. powders having highly hydrophobic surface and extremely low volatile component residue and uses in various plastic and rubber formulations)

IT 7631-86-9, Silica, properties
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(manuf. of surface-modified inorg. powders having highly hydrophobic surface and extremely low volatile component residue and uses in various plastic and rubber formulations)

IT 154471-74-6, Octadecyltrimethoxysilane polymer 224052-41-9, Hexadecyltrimethoxysilane polymer
RL: MOA (Modifier or additive use); USES (Uses)
(surface hydrophobic modifier; for manuf. of inorg. powders having highly hydrophobic surface and extremely low volatile component

residue)

IT 42557-10-8, KF 96-50CS

RL: MOA (Modifier or additive use); USES (Uses)

(surface hydrophobic modifier; for manuf. of surface-modified inorg. powders having highly hydrophobic surface and extremely low volatile component residue and uses in various plastic and rubber formulations)

IT 1344-28-1, Alumina, properties 13463-67-7, Titania, properties

RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)

(surface hydrophobic modifier; surface-modified inorg. powders having highly hydrophobic surface and extremely low volatile component residue and uses in various plastic and rubber formulations)